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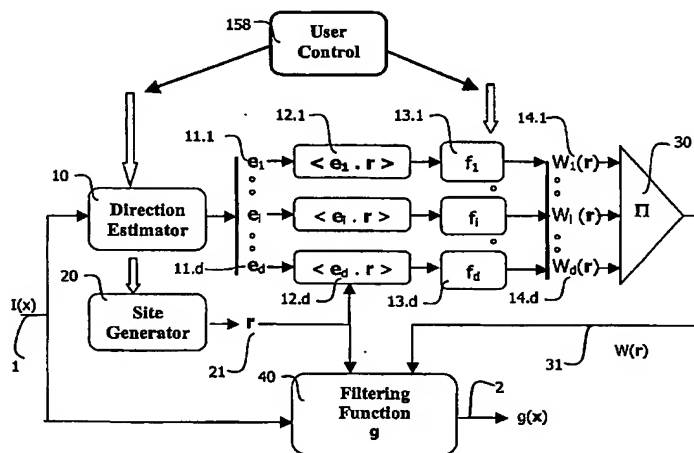
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[Continued on next page]

(54) Title: IMAGE VIEWING SYSTEM AND METHOD FOR GENERATING FILTERS FOR FITLERING IMAGE FEATURES ACCORDING TO THEIR ORIENTATION



(57) Abstract: Image processing system for generating a multidimensional adaptive oriented filter to process image data in a number d of dimensions, comprising product means for producing weighted scalar coefficients  $[W_1(r), \dots, W_i(r), \dots, W_d(r)]$  of a number d of vectors of an oriented basis of vectors by a number n of local vectors related to each point; combining means  $\Pi$  for producing a set of one-scalar weight coefficients  $[W(r)]$  from the combination of the weighted scalar products; and filtering means (g) for producing filtered image data  $[g(x)]$  from the combination of the image data  $[I(x)]$  with the one-scalar weight coefficients  $[W(r)]$ . The system further comprises a direction estimator (10) for providing, at each image point, an oriented orthogonal basis of a number d of vectors  $(e_1, \dots, e_i, \dots, e_d)$ ; a site generator (20) for providing n site vectors of a local vector support; and product means for computing d scalar products of vectors of the orthogonal basis by each of the n site vectors. This system may also comprise means for providing weighting means for the scalar products through scalar functions. The filtering means may comprise a weighted normalized sum of the image data by the one-scalar weight coefficients  $[W(r)]$ .

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